NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

STRIP CROPPING, FIELD
(acre)
CODE 586

Definition

Growing crops in a systematic arrangement of strips or bands across the general slope (not on the contour) to reduce water erosion. The crops are arranged so that a strip of grass or close-growing crop is alternated with a strip of clean-tilled crop or fallow or a strip of small grain is alternated with a strip of a tilled annual crop or fallow.

Purpose

1. To reduce sheet and rill erosion
2. To reduce transport of sediment and other water-borne contaminants downslope, on-site or off-site.

Condition Where Practice Applies

1. This practice applies on sloping cropland.

2. This practice is most suitable on undulating to rolling topography where contour stripcropping is not practical because of the difficulty of maintaining parallel strip boundaries across the hill slope and/or staying within in-row grade limits, and with slope lengths (L) less than the "Critical Slope Length" (Critical Slope Length = length of slope above which the practice loses its effectiveness) for contouring as determined using the approved erosion prediction technology.

3. The effect on erosion reduction for this practice is reduced on fields where slope length (L) exceeds the Critical Slope Length for contouring by 1.5 times, unless the slope length (L) is shortened by the installation of other practices such as terraces.

4. The practice is most effective on slopes of 2-10% but can reduce sheet and rill erosion on the steeper slopes. Effectiveness of this practice is a function of soil texture/drainage (hydrologic soil group), land slope, effective ridge height (roughness), and Cover-Management Conditions.

5. The standard does not apply to situations where the width of alternating strips are not generally equal in width or where the land is treated with contour buffer strips, or contour stripcropping.

CRITERIA

General Criteria Applicable to All Purposes

Row Grade, Strip Boundaries, and Baselines:

1. The in-row grade shall align as closely as practical to the contour to achieve the greatest erosion reduction possible. The maximum in-row grade shall not exceed 1/2 the up and down hill field slope (S).

2. For crops sensitive to ponded water for periods less than 48 hours and/or on soils classified as somewhat poorly drained, poorly drained, or very poorly drained, design a positive row grade of not less than 0.5% in-row grade toward a stable outlet.

Critical Slope Length.

1. The critical slope length for the field strip cropping system is determined using the current approved erosion prediction technology.

2. The Critical Slope Length for field stripcropping is 1.5 times the Critical Slope Length determined for contour farming. When the slope length exceeds the Critical Slope Length for the Cover-Management Condition that characterizes the field to be strip cropped, reduce the slope length below the critical length with terraces or diversions if the soil loss objective is not reached by the conservation management system.

Field Borders (Edges, Headlands, End Rows).

1. On fields where row crops are part of the crop rotation, establish and maintain perennial vegetative cover on the field borders where concentrated flows will develop or where up and down hill farming of end rows will result in a soil loss exceeding tolerable soil loss levels.

2. Field borders shall be of sufficient width to accommodate turning farm equipment without additional end rows.

Stable Outlets.

1. Direct surface flow from the field strip cropping toward a stable outlet.

2. Stable outlets include grassed waterways, field borders, underground outlets, water and sediment control basins, or similarly stabilized areas.

Level of Erosion Control.

1. The level of sheet and rill erosion control achieved by the field strip cropping system and associated practices shall meet the conservation management system objective.

2. The effect of applying this practice shall be determined using the current approved erosion prediction technology.

Arrangement of Strips.

1. Field strips shall be an alternating pattern down the slope with equal or near equal width strips of perennial legumes, grass-legume mixtures, grasses or small grain crops alternated with cropped strips that are typically planted in tilled seedbeds.

2. When used in combination with terraces or diversion, the layout of the field strips shall be coordinated with the grade and spacing of the terraces or diversions so the strip boundaries will parallel the terrace/diversion whenever possible.

Width of Strips.

1. Strips shall be of equal width, except when a varying strip width is needed to maintain the strip boundary grades within the row grade criteria. Width of strips will be uniform and not exceed 1/2 the slope length (L) or the Critical Slope Length for strip cropping whichever is less.

2. Strip widths shall be established with consideration given to erosion rates using approved erosion prediction technology in Section I of the FOTG and the farm equipment to be used.

3. Crop strip widths shall be adjusted downward to accommodate equipment widths.

Vegetation / Cover Conditions.

1. Alternate strips shall have a Vegetative Cover-Management Condition of 1 or 2 that provides protective cover and induces sediment deposition during periods when erosion is expected to occur on the alternating strips in RUSLE Cover-Management Conditions 3-7.

CONSIDERATIONS

1. Protect areas of existing or potential concentrated flow erosion with one or more conservation practices such as grassed waterways, field borders, water and sediment control basins, terraces, or diversion terraces,

2. Design and install the field strip layout to best facilitate operation of all machinery used on the strips. Whenever possible layout field strips to have multiples of full implement widths used for the farming operation and an even number of trips across the field. Where adjustments are required to maintain in-row grades within design limitations, install odd area correction strips. Keep these adjustment areas to a minimum by adjusting the entire field layout.

3. To begin layout, inspect the field's position on the landscape to find the key points for starting layout or getting a width of 1/2 or more to pass by an obstruction or a ridge saddle. Account for uncropped field roads or similar other features in the layout.

4. Remove obstructions or make changes in field boundaries or shape to improve the effectiveness of the practice and the ease of performing farming operations, where feasible and within policy constraints for wetlands, cultural resources, etc.

5. Critical slope lengths can be increased by retaining crop residue on the soil surface of the cultivated strips using crop residue management practices. However, if field strips are kept under heavy residue cover, the need for field strip cropping as an erosion and sediment reduction control practice will be reduced since less sediment will be delivered to the downslope strip.

PLANS AND SPECIFICATIONS

1. Specifications for installing, operation, and maintenance of field strip cropping shall be prepared for each field according to the Criteria, Considerations, and Operation and Maintenance described in this standard, and shall be incorporated into narrative statements in the conservation plan, recorded on jobsheets, or other suitable forms that adequately describe installation, operation and maintenance.

2. The minimum documentation required for this practice is outlined on the last page of this standard.

OPERATION AND MAINTENANCE

1. Conduct all farming operations parallel to the strip baselines. Farming operations should start on the strip boundaries and proceed both up or down the strip.

2. Alter tillage patterns to avoid creating low areas that will redirect surface water flow patterns.

3. Renovate field borders as needed to keep ground cover above 65% cover. Renovation shall only include the immediate seedbed preparation and reseeding to a sod-forming crop with or without a nurse crop. Maintain a sufficient field border width to allow farm equipment room to turn and double back on adjacent rows.

4. Follow the planned crop rotation to rotate the perennial crop strips with the annual planted strips. Rotation of the crops is the key to making the field strip cropping system effective for both crop production and erosion reduction.

5. Manage perennial crops in the rotation using the standards FORAGE HARVEST MANAGEMENT (511), NUTRIENT MANAGEMENT (590), and PEST MANAGEMENT (595) to promote longevity of stands as desired in the planned crop rotation.

6. Mow field borders as necessary to maintain the desired cover. If wildlife nesting cover is a concern delay mowing until after July 15th each year.

REFERENCES

National Standard Contour Strip Cropping, 585, February 2000
USDA Agricultural Research Service, Agricultural Handbook No. 703

Practice Documentation For:	*Stripcropping, Field 586*

The following documentation must be in the case folder or engineering subfolder.

Practice Planning

1. Is the practice part of a conservation plan?
2. Have the purpose(s) for the practice been identified?
3. Is the location of the practice identified on a map or plan drawing?

Practice Design

Have the following design criteria been addressed?

1. Width of the strips.
2. Maximum and minimum row grades.
3. Critical slope length.
4. Crop cover conditions for the strips.
5. Rotation.
6. Location of the base line.
7. Correction areas/strips
8. Stable outlets and management for the headlands.
9. Tillage ridge height.
10. Acres planned.

Practice Installation / Application

Does the practice meet the minimum criteria for the planned purpose(s)?

Have the following criteria been documented in the assistance notes or practice jobsheet?

1. Maximum and minimum grade of the established strips.
2. Widths of the established strips
3. Cover conditions of the established crops and residue.
4. Acres applied.

Practice Deficiencies

If applicable, have the practice deficiencies been communicated with the decisionmaker?

Practice Maintenance

Have the following maintenance actions been communicated to the decisionmaker?

1. Conduct all farming operations parallel to the strip baselines. Farming operations should start on the strip boundaries and proceed both up or down the strip.
2. Alter tillage patterns to avoid creating low areas that will redirect surface water flow patterns.
3. Renovate field borders as needed to keep ground cover above 65% cover. Renovation shall only include the immediate seedbed preparation and reseeding to a sod-forming crop with or without a nurse crop. Maintain a sufficient field border width to allow farm equipment room to turn and double back on adjacent rows.
4. Follow the planned crop rotation to rotate the perennial crop strips with the annual planted strips. Rotation of the crops is the key to making the field strip cropping system effective for both crop production and erosion reduction.
5. Mow field borders as necessary to maintain the desired cover. If wildlife nesting cover is a concern delay mowing until after July 15th each year.

Other Comments: